

08 Rev<sup>1</sup>

PCTO

07 1991

PATENT COOPERATION TREATY

NOTIFICATION TO THE DESIGNATED  
OFFICE OF RECEIPT OF  
RECORD COPY  
issued under PCT Rule 24.2(a)

INTERNATIONAL APPLICATION NO. PCT/GB91/00706

To:

United States Patent  
and Trademark Office  
Washington, D.C.

APPLICANT'S OR AGENT'S  
FILE REFERENCE:

SDR/16160

in its capacity as a designated Office

DATE OF MAILING OF  
THIS NOTIFICATION:  
22 May 1991 (22.05.91)

From:  
The International Bureau of WIPO  
1211 Geneva 20  
Switzerland

NAME(S) OF APPLICANT(S):

COATES, Jonathan, Alan, Victor et al.

INTERNATIONAL FILING DATE:

02 May 1991 (02.05.91)

PRIORITY DATE(S) CLAIMED:

02 May 1990 (02.05.90)

DATE OF RECEIPT OF RECORD COPY BY INTERNATIONAL BUREAU:

21 May 1991 (21.05.91)

D. Barmes  
(Authorized Officer)

C07D

(21) Int. Application Number:	PCT/GB91/00706	(51) International Patent Classification <sup>5</sup> :		(11) Int. Publication Number:	WO 91/17159
(22) Int. Filing Date:	2 May 1991 (02.05.91)	C07D 411/04, A61K 31/505	A1	(43) Int. Publication Date:	14 November 1991 (14.11.91)
<b>(30) Priority data:</b> 9009861.7 2 May 1990 GB (02.05.90)					
<b>(54) Title:</b> 1,3-OXATHIOLANE NUCLEOSIDE ANALOGUES					
<b>(57) Abstract</b>  (-)-4-Amino-1-(2-hydroxymethyl-1,3-oxathiolan-5-yl)-(1H)-pyrimidin-2-one, its pharmaceutically acceptable derivatives, pharmaceutical formulations thereof, methods for its preparation and its use as an antiviral agent are described.					
<b>(71) Applicant (for all designated States except US):</b> IAF BIOCHEM INTERNATIONAL INC. [CA/CA]; 10900 Hamon Street, Montreal, Quebec H3M 3A1 (CA).					
<b>(72) Inventors; and</b> <b>(75) Inventors/Applicants (for US only):</b> COATES, Jonathan, Alan, Victor [GB/GB]; Glaxo Group Research Limited, Berkley Avenue, Greenford, Middlesex UB6 0HE (GB). MUTTON, Ian, Martin [GB/GB]; Glaxo Group Research Limited, Berkley Avenue, Greenford, Middlesex UB6 0HE (GB). PENN, Charles, Richard [GB/GB]; STOR- ER, Richard [GB/GB]; WILLIAMSON, Christopher [GB/GB]; Glaxo Group Re- search Limited, Berkley Avenue, Greenford, Middlesex UB6 0HE (GB).					
<b>(74) Agent:</b> RITTER, Stephen, David; Mathys & Squire, 10 Fleet Street, London EC4Y 1AY (GB).					
<b>(81) Designated States:</b> AT (European patent), AU, BE (European patent), BF (OAPI patent), BG, BJ (OAPI patent), CA, CF (OAPI pa- tent), CG (OAPI patent), CH (European pa- tent), CI (OAPI patent), CM (OAPI patent),					

DE (European patent), DK (European pa- tent), ES (European patent), FI, FR (Eu- ropean patent), GA (OAPI patent), GB (European patent), GR (European pa- tent), HU, IT (European patent), JP, KR, LK, LU (European patent), ML (OAPI pa- tent), MR (OAPI patent), NL (Euro- pean patent), NO, PL, RO, SE (European patent), SN (OAPI patent), SU, TD (OAI- PI patent), TG (OAPI patent), US.	Continuation of the preceding entry	(11) Int. Publication Number:	WO 91/17159
<b>Published</b> <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>			

PATENT COOPERATION TREATY  
INTERNATIONAL SEARCH REPORT

11 Rec'd PCT/PTO

24 SEP 1991

<b>IDENTIFICATION OF THE INTERNATIONAL APPLICATION</b>		Applicant's or Agent's File Reference SDR/16160
International Application No.  PCT/ GB91/00706	International Filing Date 02/05/91	
Receiving Office  RO/ GB	Priority Date Claimed 02/05/90	
Applicant (Name)  IAF BioChem International Inc. et al.		
I. <input checked="" type="checkbox"/> CERTAIN CLAIMS WERE FOUND UNSEARCHABLE <sup>1</sup> (Observations on supplemental sheet (2))		
II. <input type="checkbox"/> UNITY OF INVENTION IS LACKING <sup>2</sup> (Observations on supplemental sheet (2))		
III. TITLE, ABSTRACT AND FIGURE OF DRAWING		
1. The following indicated items are approved as submitted by the applicant: <sup>3</sup>		
<input checked="" type="checkbox"/> Title. <input checked="" type="checkbox"/> Abstract.		
2. The texts established by this International Searching Authority of the following indicated items are set forth below:		
<input type="checkbox"/> Title. <input type="checkbox"/> Abstract.		
<input type="checkbox"/> Text of the abstract continued on supplemental sheet (1)		
3. a. <input type="checkbox"/> The definitive contents of the abstract are established by this International Searching Authority as proposed in form PCT/ISA/204, previously sent to the applicant.		
b. <input type="checkbox"/> This report is incomplete as far as the abstract is concerned as the time limit for comments by the applicant on the draft prepared by this International Searching Authority has not expired. <sup>4</sup>		
4. Figure to be published with the abstract <sup>5</sup>		
Figure No. <input type="checkbox"/> None of the Figures		
<input type="checkbox"/> as suggested by the applicant <input type="checkbox"/> because the applicant failed to suggest a figure <input type="checkbox"/> because this figure better characterizes the invention		

# INTERNATIONAL SEARCH REPORT

International Application No PCT/GB 91/00706

## I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) \*

According to International Patent Classification (IPC) or to both National Classification and IPC

IPC<sup>5</sup> C 07 D 411/04, A 61 K 31/505

## II. FIELDS SEARCHED

Minimum Documentation Searched <sup>7</sup>

Classification System	Classification Symbols
IPC <sup>5</sup>	C 07 D 411/04, C 07 D 405/04
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched *	

## III. DOCUMENTS CONSIDERED TO BE RELEVANT\*

Category *	Citation of Document, <sup>11</sup> with indication, where appropriate, of the relevant passages <sup>12</sup>	Relevant to Claim No. <sup>13</sup>
A	EP, A, 0337713 (I.A.F.) 18 October 1989 see pages 1-5,11; claims  --	1,6-9
P,X	EP, A, 0382526 (I.A.F.) 16 August 1990 see page 17, example 7; page 27; claims  -----	1,6-9

### \* Special categories of cited documents: <sup>10</sup>

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the International filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

## IV. CERTIFICATION

Date of the Actual Completion of the International Search

31st July 1991

Date of Mailing of this International Search Report

- 2. 09. 91

International Searching Authority

EUROPEAN PATENT OFFICE

Signature of Authorized Officer

M. PEIS

M. Peis

## FURTHER INFORMATION CONTINUED FROM THE SECOND SHEET

V.  OBSERVATIONS WHERE CERTAIN CLAIMS WERE FOUND UNSEARCHABLE<sup>1</sup>

This International search report has not been established in respect of certain claims under Article 17(2) (a) for the following reasons:

1.  Claim numbers ...10.... because they relate to subject matter not required to be searched by this Authority, namely:

Pls. see Rule 39.1(iv) - PCT:

Methods for treatment of the human or animal body by therapy or surgery as well as diagnostic methods.

2.  Claim numbers ..... because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful International search can be carried out, specifically:

3.  Claim numbers....., because they are dependent claims and are not drafted in accordance with the second and third sentences of PCT Rule 6.4(a).

VI.  OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING<sup>2</sup>

This International Searching Authority found multiple inventions in this International application as follows:

1.  As all required additional search fees were timely paid by the applicant, this International search report covers all searchable claims of the International application.
2.  As only some of the required additional search fees were timely paid by the applicant, this International search report covers only those claims of the International application for which fees were paid, specifically claims:

3.  No required additional search fees were timely paid by the applicant. Consequently, this International search report is restricted to the invention first mentioned in the claims; it is covered by claim numbers:
4.  As all searchable claims could be searched without effort justifying an additional fee, the International Searching Authority did not invite payment of any additional fee.

## Remark on Protest:

- The additional search fees were accompanied by applicant's protest.
- No protest accompanied the payment of additional search fees.

See notes on accompanying sheet

**ANNEX TO THE INTERNATIONAL SEARCH REPORT  
ON INTERNATIONAL PATENT APPLICATION NO.**

GB 9100706  
SA 47177

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report. The members are as contained in the European Patent Office EDP file on 27/08/91. The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
EP-A- 0337713	18-10-89	AU-A-	3264489	12-10-89
		JP-A-	1316375	21-12-89
EP-A- 0382526	16-08-90	AU-A-	4920190	16-08-90
		CA-A-	2009637	08-08-90
		JP-A-	3007282	14-01-91

05 DEC 1991

**INTERNATIONAL APPLICATION  
UNDER THE  
PATENT COOPERATION TREATY**

**REQUEST**

THE UNDERSIGNED REQUESTS THAT THE PRESENT  
INTERNATIONAL APPLICATION BE PROCESSED  
ACCORDING TO THE PATENT COOPERATION TREATY

(The following is to be filled in by the receiving Office)

**INTERNATIONAL  
APPLICATION No:**

PCT/GB 91/00735

**INTERNATIONAL  
FILING DATE:**

02 MAY 1991

**United Kingdom Patent Office  
PCT International Application**

(Stamp)

Name of receiving Office and "PCT International Application"

Applicant's or Agent's File Reference SDR/16160  
(indicated by applicant if desired)

Box No. I TITLE OF INVENTION 1,3-OXATHIOLANE NUCLEOSIDE ANALOGUES

**Box No. II APPLICANT (WHETHER OR NOT ALSO INVENTOR); DESIGNATED STATES FOR WHICH HE/SHE/IT IS APPLICANT.** Use this box for indicating the applicant or, if there are several applicants, one of them. If more than one person (includes, where applicable, a legal entity) is involved, continue in Box No. III.

The person identified in this box is (check one only):  applicant and inventor\*  applicant only

Name and address: \*\*

IAF BioChem International Inc  
10900 Hamon Street  
Montreal, Quebec  
H3M 3A1  
CANADA

Telephone number:  
(including area code)

Telegraphic address:

Telexaddress:

Country of nationality: CA

Country of residence: \*\*\*

CA

The person identified in this box is applicant for the purposes of (check one only):

all designated States  all designated States except the United States of America  the United States of America only  the States indicated in the "Supplemental Box"

**Box No. III FURTHER APPLICANTS, IF ANY; (FURTHER) INVENTORS, IF ANY; DESIGNATED STATES FOR WHICH THEY ARE APPLICANTS (IF APPLICABLE).** A separate sub-box has to be filled in in respect of each person (includes, where applicable, a legal entity). If the following two sub-boxes are insufficient, continue in the "Supplemental Box," (giving there for each additional person the same indications as those requested in the following two sub-boxes) or by using a "continuation sheet."

The person identified in this sub-box is (check one only):  applicant and inventor\*  applicant only  inventor only\*

Name and address: \*\*

COATES; Jonathan Alan Victor  
Glaxo Group Research Limited  
Berkley Avenue, Greenford  
Middlesex UB6 OHE  
ENGLAND

a.b.

If the person identified in this sub-box is applicant (or applicant and inventor), indicate also:

Country of nationality: GB

Country of residence: \*\*\*

GB

and whether that person is applicant for the purposes of (check one only):

all designated States  all designated States except the United States of America  the United States of America only  the States indicated in the "Supplemental Box"

The person identified in this sub-box is (check one only):  applicant and inventor\*  applicant only  inventor only\*

Name and address: \*\*

MUTTON; Ian Martin  
Glaxo Group Research Limited  
Berkley Avenue, Greenford  
Middlesex UB6 OHE  
ENGLAND

a.b.

If the person identified in this sub-box is applicant (or applicant and inventor), indicate also:

Country of nationality: GB

Country of residence: \*\*\*

GB

and whether that person is applicant for the purposes of (check one only):

all designated States  all designated States except the United States of America  the United States of America only  the States indicated in the "Supplemental Box"

\* If the person indicated as "applicant and inventor" or as "inventor only" is not an inventor for the purposes of all the designated States, give the necessary indications in the "Supplemental box."

\*\* Indicate the name of a natural person by giving his/her family name first followed by the given name(s). Indicate the name of a legal entity by its full official designation. In the address, include both the postal code (if any) and the country (name).

\*\*\* If residence is not indicated, it will be assumed that the country of residence is the same as the country indicated in the address.

 05 June 1991  
 OS-106-21

SUBSTITUTE SHEET

**Box No. III CONTINUATION (IF REQUIRED) FURTHER APPLICANTS, IF ANY; (FURTHER) INVENTORS, IF ANY; DESIGNATED STATES FOR WHICH THEY ARE APPLICANTS (IF APPLICABLE).** A separate sub-box has to be filled in in respect of each person (includes, where applicable, a legal entity).

The person identified in this sub-box is (check one only):  applicant and inventor\*  applicant only  inventor only\*

Name and address:\*\*

PENN; Charles Richard  
Glaxo Group Research Limited  
Berkley Avenue, Greenford  
Middlesex UB6 OHE  
ENGLAND

C.R.

If the person identified in this sub-box is applicant (or applicant and inventor), indicate also:

Country of nationality: GB

Country of residence:\*\*\*

GB

and whether that person is applicant for the purposes of (check one only):

all designated States

all designated States except  
the United States of America

the United States  
of America only

the States indicated  
in the "Supplemental Box"

The person identified in this sub-box is (check one only):  applicant and inventor\*  applicant only  inventor only\*

Name and address:\*\*

STORER; Richard  
Glaxo Group Research Limited  
Berkley Avenue, Greenford  
Middlesex UB6 OHE  
ENGLAND C.R.

If the person identified in this sub-box is applicant (or applicant and inventor), indicate also:

Country of nationality: GB

Country of residence:\*\*\*

GB

and whether that person is applicant for the purposes of (check one only):

all designated States

all designated States except  
the United States of America

the United States  
of America only

the States indicated  
in the "Supplemental Box"

The person identified in this sub-box is (check one only):  applicant and inventor\*  applicant only  inventor only\*

Name and address:\*\*

WILLIAMSON; Christopher  
Glaxo Group Research Limited  
Berkley Avenue, Greenford  
Middlesex UB6 OHE  
ENGLAND

C.R.

If the person identified in this sub-box is applicant (or applicant and inventor), indicate also:

Country of nationality: GB

Country of residence:\*\*\*

GB

and whether that person is applicant for the purposes of (check one only):

all designated States

all designated States except  
the United States of America

the United States  
of America only

the States indicated  
in the "Supplemental Box"

The person identified in this sub-box is (check one only):  applicant and inventor\*  applicant only  inventor only\*

Name and address:\*\*

If the person identified in this sub-box is applicant (or applicant and inventor), indicate also:

Country of nationality:

Country of residence:\*\*\*

and whether that person is applicant for the purposes of (check one only):

all designated States

all designated States except  
the United States of America

the United States  
of America only

the States indicated  
in the "Supplemental Box"

\* If the person indicated as "applicant and inventor" or as "inventor only" is not an inventor for the purposes of all the designated States, give the necessary indications in the "Supplemental box."

\*\* Indicate the name of a natural person by giving his/her family name first followed by the given name(s). Indicate the name of a legal entity by its full official designation. In the address, include both the postal code (if any) and the country (name).

\*\*\* If residence is not indicated, it will be assumed that the country of residence is the same as the country indicated in the address.

If this continuation sheet is not used, it need not be included in the Request.

**Box No. IV AGENT (IF ANY) OR COMMON REPRESENTATIVE (IF ANY); ADDRESS FOR NOTIFICATIONS (IN CERTAIN CASES).** A common representative may be appointed only if there are several applicants and if no agent is or has been appointed; the common representative must be one of the applicants.  
The following person (includes, where applicable, a legal entity) is hereby/has been appointed as agent or common representative to act on behalf of the applicant(s) before the competent International Authorities:

Name and address, including postal code and country:

If the space below is used instead for an address for notifications, mark here

RITTER; Stephen David  
MATHYS & SQUIRE  
10 FLEET STREET  
LONDON, EC4Y 1AY C.B.

Telephone number: 071-353-2491 Telegraphic address: 24827

Teleprinter address: 071-583-0528

**Box No. V DESIGNATION OF GROUPS OF STATES OR STATES<sup>(1)</sup>; CHOICE OF CERTAIN KINDS OF PROTECTION OR TREATMENT.** The following designations are hereby made (please mark the applicable check-boxes):

Regional Patent

- EP European Patent<sup>(2)</sup>: AT Austria, BE Belgium, CH and LI Switzerland and Liechtenstein, DE Germany (Federal Republic of), DK Denmark, ES Spain, FR France, GB United Kingdom, IT Italy, LU Luxembourg, NL Netherlands, SE Sweden, GR GREECE<sup>44</sup> and any other State which is a Contracting State of the European Patent Convention and of the PCT
- OA OAPI Patent: Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Congo, Gabon, Mali, Mauritania, Senegal, Togo, and any other State which is a Contracting State of OAPI and of the PCT; if other OAPI title desired, specify on dotted line<sup>(3)</sup>: CI<sup>44</sup>

National Patent (if other kind of protection or treatment desired, specify on dotted line<sup>(3)</sup>)

- |  |  |
|--|--|
| <input type="checkbox"/> AT Austria <sup>(3)</sup> .....                               | <input checked="" type="checkbox"/> KR Republic of Korea <sup>(3)</sup> .....        |
| <input checked="" type="checkbox"/> AU Australia <sup>(3)</sup> .....                  | <input checked="" type="checkbox"/> LK Sri Lanka .....                               |
| <input type="checkbox"/> BB Barbados .....   | <input type="checkbox"/> LU Luxembourg <sup>(3)</sup> .....                          |
| <input checked="" type="checkbox"/> BG Bulgaria <sup>(3)</sup> .....                   | <input type="checkbox"/> MC Monaco <sup>(3)</sup> .....                              |
| <input type="checkbox"/> BR Brazil <sup>(3)</sup> .....                                | <input type="checkbox"/> MG Madagascar .....   |
| <input checked="" type="checkbox"/> CA Canada .....                                    | <input type="checkbox"/> MW Malawi <sup>(3)</sup> .....                              |
| <input type="checkbox"/> CH and LI Switzerland and Liechtenstein .....                 | <input type="checkbox"/> NL Netherlands .....  |
| <input type="checkbox"/> DE Germany (Federal Republic of) <sup>(3)</sup> .....         | <input checked="" type="checkbox"/> NO Norway .....                                  |
| <input type="checkbox"/> .....   | <input checked="" type="checkbox"/> RO Romania .....                                 |
| <input type="checkbox"/> DK Denmark .....  | <input type="checkbox"/> SD Sudan .....  |
| <input type="checkbox"/> ES Spain <sup>(3)</sup> .....                                 | <input type="checkbox"/> SE Sweden .....   |
| <input checked="" type="checkbox"/> FI Finland .....                                   | <input checked="" type="checkbox"/> SU Soviet Union <sup>(3)</sup> .....             |
| <input type="checkbox"/> GB United Kingdom .....                                       | <input type="checkbox"/> .....   |
| <input checked="" type="checkbox"/> HU Hungary .....                                   | <input checked="" type="checkbox"/> US United States of America <sup>(3)</sup> ..... |
| <input checked="" type="checkbox"/> JP Japan <sup>(3)</sup> .....                      | <input type="checkbox"/> .....   |
| <input type="checkbox"/> KP Democratic People's Republic of Korea <sup>(3)</sup> ..... | <input type="checkbox"/> .....   |
| <input type="checkbox"/> .....   | <input type="checkbox"/> .....   |

Space reserved for designating States (for the purposes of a national patent) which have become party to the PCT after the issuance of this sheet:

PL PO (Poland) EP (European Patent): GR Greece

- (1) The applicant's choice of the order of designations may be indicated by marking the check-boxes with sequential arabic numerals (see also the "Notes to Box No. V").  
 (2) The selection of particular States for a European patent can be made upon entering the national (regional) phase before the European Patent Office (see also the "Notes to Box No. V").  
 (3) If another kind of protection or a title of addition or, in the United States of America, treatment as a continuation or a continuation-in-part is desired, specify according to the instructions given in the "Notes to Box No. V."

**Box No. VI PRIORITY CLAIM (IF ANY).** The priority of the following earlier application(s) is hereby claimed:

Country (country in which it was filed if national application; one of the countries for which it was filed if regional or international application)	Filing Date (day, month, year)	Application No.	Office of Filing (fill in only if the earlier application is an international application or a regional application)
(1) GB	2nd MAY 1990 02 - 05 - 90	9009861.7	
(2)			
(3)			

(Letter codes may be used to indicate country and/or Office of filing)

When the earlier application was filed with the Office which, for the purposes of the present international application, is the receiving Office, the applicant may, *against payment of the required fee*, ask the following:

- the receiving Office is hereby requested to prepare and transmit to the International Bureau a certified copy of the above-mentioned earlier application/of the earlier applications identified above by the numbers (insert the applicable numbers) .....

**Box No. VII EARLIER SEARCH (IF ANY).** Fill in where a search (international, international-type or other) by the International Searching Authority has already been requested (or completed) and the said Authority is now requested to base the international search, to the extent possible, on the results of the said earlier search. Identify such search or request either by reference to the relevant application (or the translation thereof) or by reference to the search request.

International application number or number and country (or regional Office) of other application:

International/regional/national filing date

Date of request for search:

Number (if available) given to search request:

**Box No. VIII SIGNATURE OF APPLICANT(S) OR AGENT**

RITTER; Stephen David

If the present Request form is signed on behalf of any applicant by an agent, a separate power of attorney appointing the agent and signed by the applicant is required. If in such case it is desired to make use of a general power of attorney (deposited with the receiving Office), a copy thereof must be attached to this form.

**Box No.IX CHECK LIST (To be filled in by the Applicant)**

This international application contains the following number of sheets:

1. request	4	sheets
2. description	29	sheets
3. claims	2	sheets
4. abstract	1	sheets
5. drawings	-	sheets
Total		36 sheets

Figure number ..... of the drawings (if any) is suggested to accompany the abstract for publication.

This international application as filed is accompanied by the items checked below:

1.  separate signed power of attorney
2.  copy of general power of attorney
3.  priority document(s) (see Box No. VI)
4.  receipt of the fees paid or revenue stamps
5.  cheque for the payment of fees
6.  request to charge deposit account
7.  other document (specify)

FORM 51/77; FORM 24/77

(The following is to be filled in by the receiving Office)

1. Date of actual receipt of the purported international application: 02 May 1991 02-05-91
2. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:
3. Date of timely receipt of the required corrections under Article 11 of the PCT:
4. Drawings  Received  No Drawings

(The following is to be filled in by the International Bureau)

Date of receipt of the record copy: 21 MAY 1991 (21.05.91)

# INTERNATIONAL SEARCH REPORT

International Application No. PCT/GB 91/00706

## I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all)

According to International Patent Classification (IPC) or to both National Classification and IPC  
 5 C 07 D 411/04, A 61 K 31/505

IPC:

## II. FIELDS SEARCHED

Minimum Documentation Searched \*

Classification System	Classification Symbols
IPC <sup>5</sup>	C 07 D 411/04, C 07 D 405/04
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched *	

## III. DOCUMENTS CONSIDERED TO BE RELEVANT\*

Category *	Citation of Document, ** with indication, where appropriate, of the relevant passages ***	Relevant to Claim No. ***
A	EP, A, 0337713 (I.A.F.) 18 October 1989 see pages 1-5,11; claims	1,6-9
	--	
P,X	EP, A, 0382526 (I.A.F.) 16 August 1990 see page 17, example 7; page 27; claims	1,6-9
	-----	

### \* Special categories of cited documents: 10

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"Z" document member of the same patent family

## IV. CERTIFICATION

Date of the Actual Completion of the International Search

55 31st July 1991

Date of Mailing of this International Search Report

- 2. 09. 91

International Searching Authority

EUROPEAN PATENT OFFICE

Signature of Authorized Officer

M. PEIS

M. Peis

18 Rec'd PCT/PTO 20 FEB 1992

## FURTHER INFORMATION CONTINUED FROM THE SECOND SHEET

10

15

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35

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55

## V. A OBSERVATIONS WHERE CERTAIN CLAIMS WERE FOUND UNSEARCHABLE :

This International search report has not been established in respect of certain claims under Article 17(2) (a) for the following reasons:

1.  Claim numbers 10, because they relate to subject matter not required to be searched by this Authority, namely:

Pls. see Rule 39.1(iv) - PCT:

Methods for treatment of the human or animal body by therapy or surgery as well as diagnostic methods.

2.  Claim numbers \_\_\_\_\_, because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3.  Claim numbers \_\_\_\_\_, because they are dependent claims and are not drafted in accordance with the second and third sentences of PCT Rule 6.4(a).

VI.  OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING :

This International Searching Authority found multiple inventions in this International application as follows:

1.  As all required additional search fees were timely paid by the applicant, this International search report covers all searchable claims of the International application.

2.  As only some of the required additional search fees were timely paid by the applicant, this International search report covers only those claims of the International application for which fees were paid, specifically claims:

3.  No required additional search fees were timely paid by the applicant. Consequently, this International search report is restricted to the invention first mentioned in the claims; it is covered by claim numbers:

4.  As all searchable claims could be searched without effort justifying an additional fee, the International Searching Authority did not invite payment of any additional fee.

## Remarks on Protest

- The additional search fees were accompanied by applicant's protest.
- No protest accompanied the payment of additional search fees.

ANNEX TO THE INTERNATIONAL SEARCH REPORT  
ON INTERNATIONAL PATENT APPLICATION NO.

GB 9100706  
SA 47177

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report.  
The members are as contained in the European Patent Office EDP file on 27/08/91.  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

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	Patent document cited in search report	Publication date	Patent family members)		Publication date
15	EP-A- 0337713	18-10-89	AU-A-	3264489	12-10-89
			JP-A-	1316375	21-12-89
20	EP-A- 0382526	16-08-90	AU-A-	4920190	16-08-90
			CA-A-	2009637	08-08-90
			JP-A-	3007282	14-01-91

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EPO FORM 1007